NINTH

ANNUAL REPORT

19

OF THE

PRESIDENT AND DIRECTORS

OF THE

CHESAPEAKE AND OHIO CANAL COMPANY

TO THE STOCKHOLDERS,

Made June 12, 1837.

WASHINGTON:
PRINTED BY GALES AND SEATON.
1837.

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REPORT.

Since the last annual meeting of the stockholders, the works on the Chesapeake and Ohio Canal have been prosecuted with all possible vigor, but under circumstances of peculiar difficulty, owing to the vast competition for labor, by the numerous works of internal improvement in progress throughout the Union, and the unprecedented price of provisions incident on the general failure of agricultural products.

The entire length of the line from the basin in Georgetown to Cumberland is one hundred and eighty-four miles; and in order to exhibit to the stockholders a view of present and prospective operations on the canal, the line will be divided into three sections:

1st. From Georgetown to dam No. 5, seven miles above Williamsport, in distance one hundred and seven miles, and now navigable.

2d. From dam No. 5 to dam No. 6, at the Great Cacapon, twenty-seven miles, being the line now under contract and in progress.

3d. From dam No. 6 to Cumberland, fifty miles, including the tunnel, deep cut at Old Town, and other works under contract.

The Board has carefully inspected the entire line of canal now in use, from tide water at Georgetown to dam No. 5, as well as the line under contract and progressing to the Great Cacapon, and from that point to Cumberland. Many improvements have been made between the first-named points, essential to their security and permanency; and it gives the Board great pleasure to state that the embankments are acquiring strength and solidity, which secures the canal from the hazard of future breaches, and the consequent interruption of its trade. Until within the last week, no interruption to navigation has occurred from breaches, or any other cause, during the present year, and then only for three or four days. The inner slope of the tow-path has been covered with broken stone to a considerable extent, and it is deemed advisable to proceed gradually with this improvement on the whole line where it may be necessary. It has been found from experience to answer the purpose of protection better than walling, and at a diminished cost. This work is performed by a few hands in the service of the Company, under the direction of the superintendents on each division, and at times when they cannot be more profitably employed. The basin at Georgetown has been so much filled by deposites of sand and mud from the freshets of Rock Creek, that the Board found it necessary to adopt measures for their removal, and for that purpose procured a dredging machine, which is in successful operation, and has already made considerable progress in removing the deposite. Between Mason's foundry and the Little Falls, a substantial stop-gate and waste-wier have been constructed, adding greatly to the security of that level.

To guard in future against accidents which have occurred at the high walls below the Great falls, the Board has directed the erection of a strong post and rail fence at all dangerous points, to be placed on the side of the tow-path next the river. Part of this work has been finished, and the remainder is in progress.

The lift-locks near Edwards's Ferry and opposite the mouth of Goose Creek, in Loudoun county, Virginia, are nearly completed, and in a few weeks will be in operation. They have been constructed under a provision of the law of that State making a subscription of $250,000 to the stock of this Company. Through the medium of these locks, the trade of the rich and populous county of Loudoun, bordering on the Potomac for forty miles, will be accommodated and drawn to the canal.

Under the requirement of the act of Maryland of June 4, 1836, arrangements were at an early day entered into with the Baltimore and Ohio Railroad Company, for the passage of locomotive engines on the road between the Point of Rocks and Harper's Ferry, by removing the restrictions previously imposed on that Company. The whole subject was referred to the chief engineers of the two Companies, appointed by them, respectively, commissioners, who agreed on terms, which were accepted and ratified by their respective Boards.

A substantial post and rail fence is to be erected on the river side of the towing-path, at every point where the railroad and canal are in juxtaposition; the Railroad Company having paid the Canal Company a sum of money, deemed to be adequate for the erection of the fence and its necessary repairs. This work is under contract, and in a few weeks will be completed. It is believed that it will afford ample security to the navigation of the canal; locomotive engines have been in daily use on the railroad from the Point of Rocks to Harper's Ferry for several weeks past; and we are happy to state that our apprehensions from this source have not been realized, and that no accident of any description has occurred, or any serious inconvenience felt, by the navigators of the canal.

By arrangement with the Railroad Company, a footway has been constructed on the lower side of the viaduct, recently built across the Potomac at Harper's Ferry, by means of which the boats at that place and those which may descend the Shenandoah, will be safely towed to the lift-lock on the Maryland shore, and received into the canal.

A dam below the mouth of the Shenandoah across the Potomac, at the same time that it would afford a powerful feeder to the canal from the combined waters of the two rivers, would make an extensive and beautiful basin at Harper's Ferry, highly important to the trade of that flourishing depot, and giving ready access to the canal at all seasons. The dam about two miles above Harper's Ferry is now the feeder, both for the canal and the public works of the United States at that place. It is apprehended that, when the trade on the canal becomes active, the supply of water from this feeder will not be adequate in dry seasons for both works; and it is hoped that the Government, aware of the necessity of having the undivided use and control of the upper dam as a feeder, will erect one for the purposes of the Company, at the point designated, below the mouth of the Shenandoah. Independent of the consideration above stated, the Government would be amply remunerated for the cost of the dam, by the facilities which the basin would afford to her extensive works, and the enhanced value of all its property at Harper's Ferry.

Since the last annual report, the Board has put under contract the towing-path on the pool of dam No. 4, between Shepherdstown and Williamsport. That portion of it between the dam and Galloway's mill, about two miles, is nearly completed, and now in use; the remainder will be finished in the course of the summer. The extent of this pool is three and one fourth miles, and its navigation has been attended with so much delay and danger that the construction of the towing-path became indispensable for the security of boats navigating it. For a considerable distance, high and precipitous cliffs of rock, with very deep water at their base, present difficulties in the construction of a continuous canal, which had been greatly enhanced since the erection of a dam, and at no time could it have been made but at enormous cost, whilst that of the towing-path is comparatively small.

The high freshets of this spring have passed by without injury to the canal, and we have every reason to believe that the great strength of the dams, superior masonry of the aqueducts, locks, culverts, and wastes, with the increasing solidity of the embankments, afford an ample guarantee against future damage. The requisite lock-houses on the line below dam No. 5 have been built, with the exception of three or four which are in progress, or about to be contracted for.

Having noticed all the subjects of interest connected with the navigable canal since the last annual report, we will now proceed to the line under contract and construction, between dam No. 5 and Cacapon. The masonry of lock No. 45, about half a mile above the dam, is finished; and, for this short distance, it is proposed to make a tow-path along the pool, which will be attended with much less expense than a canal, to be constructed in water more than twenty feet in depth, and passing around projecting cliffs of rock. The two sections immediately above the lock, and reaching to Charles's mill, will be finished in a few days. For about one and a half miles above this point we encounter the most difficult work below the Cacapon. Charles's cliffs, for the distance of about four hundred yards, rise to the perpendicular height of nearly one hundred feet: the depth of the pool, at their base, being twenty-two feet. This has to be filled up with earth, transported in boats, to the bottom of the canal; the rock blasted from the cliffs forming the outer or river protection. About two thirds of this filling has been accomplished, and the contractors have given every assurance that their force shall be increased, so as to ensure the completion of the work within the specified time. In immediate connexion with this section commences the locks, four in number, and the deep cut through Prather's Neck. The locks are in progress, and we have no doubt will be finished in time. The deep cut, two thousand feet in length, was divided between different contractors, and has been prosecuted with vigor; the upper half is finished, and the lower section nearly so. The deepest cutting is about forty feet. The location for several miles of this line is on favorable ground and through alluvial bottoms, occasionally interrupted by heavy and costly sections; these occur wherever the canal is forced into the river by the precipitous nature of the ground—strong protection-walls then become necessary, and heavy rock excavation. Of these sections the most costly are at Millstone Point, Hancock, and the Round Hill. The masonry on this line has been executed in a workmanlike manner, and of excellent materials, chiefly of limestone. At one time fears were entertained that suitable stone could not be obtained, but we have been agreeably disappointed, good quarries having been found at several points, although, in some instances, the stone is hauled a considerable distance. Between dam No. 5 and Cacapon, beside numerous culverts of from four to twelve feet span, and one over Little Tonoloway of forty feet span, there are ten locks of eight feet lift each, including the guard-lock at dam No. 6, and two aqueducts crossing Licking creek and Great Tonoloway. The first is an arch of ninety feet span, the second of sixty-five feet between the abutments—the arches of both being turned. The materials on all are of the most approved kind, and the workmanship cannot be surpassed.

On all these constructions strength and durability have been the desideratum with the Board, and all unnecessary ornament, which would enhance their cost, has been dispensed with.

The progress made on dam No. 6, located a short distance above Cacapon river, has thus far realized the expectations of the Board; and, from the well-known character of the contractors for enterprise and punctuality, we entertain no apprehension as to the completion of this work in time to admit the water simultaneously on the whole line. The abutments of the dam on both shores have been raised to the height of ten or twelve feet, and would, in all probability, have been nearly completed by this time, but for the repeated interruptions from high freshets. All the materials for the dam are in readiness, and it can be erected so soon as the river shall fall to its usual low-water mark. A guard-lock at the dam serves the purposes of a feeder to the canal, and for the admission of boats navigating the pool, as well as for the reception of the trade from the Cacapon, which, by a dam across that stream at its mouth, and a canal of less than one mile in length, may be connected with the main stem by means of the pool and guard-lock. By former surveys, it was proposed to locate the dam a short distance below the mouth of the Cacapon; but on a more thorough examination by our engineer, he reported decidedly against the location at that point, mainly on the ground that the bed of the river did not present a suitable foundation for such a structure, and that the hazard of its being swept away would be greatly augmented by its increased height at that point. Other and substantial reasons were adduced, which decided the Board in the adoption of the present location.

The damages which the Company has been forced to pay by the award of juries, for the right of way, to land proprietors, have been generally heavy, and in many cases excessive. The consideration of benefits, from the increased facilities for the transportation of the products of the country bordering on the canal, and the enhanced value of the property, appear seldom, if ever, to have entered into their calculations; on the contrary, their sympathies seem to have been enlisted for the proprietors, and, in some instances, the award for damages has amounted to more than the whole farm would have sold for before the canal was projected. To avoid these inquisitions, the Board, through the commissioner of the Company, has made arrangements by compromise, whenever they could be effected, with the land proprietors, and in every case have promptly paid the sums agreed on. The same remarks, with regard to the damages, apply with equal force to the line between Cacapon and Cumberland.

In the location and construction of the line of canal above dam No. 5, as well as that designed from Cacapon to Cumberland, the Board has acted on the principle that temporary works and expedients, to hasten the opening of the navigation to the coal region, cannot accomplish the object for which this magnificent improvement was designed, and would prove a failure alike discreditable to its projectors and managers, as well as to the community concerned; neither would the interests of the stockholders have been consulted by a plan of operation looking only to saving in cost and time. False and imperfect construction and location would necessarily induce frequent and costly repairs, amounting eventually to more than the first cost of a perfect work; and as to time, much more would be lost than gained, from the repeated and vexatious interruptions to trade, of breaches in the embankments, and failures in the masonry. Whilst, on the one hand, the Board has been actuated by the most scrupulous regard to the proper and judicious application of the funds of the Company, on the other hand, they have endeavored to avoid false notions of economy in the construction of a work which is not designed to subserve the purposes of the present day or century, but is to endure for all time.

The Board and engineers have availed themselves of the many useful lessons of experience taught them in the early construction of the canal, and in their subsequent operations have endeavored to avoid the errors incident to a new work, in a section of country where, at that time, but little practical knowledge had been acquired in such improvements.

The chief interruptions to the navigation have occurred from the mode of making the embankments and the location of the canal too near to the banks of the river through alluvial bottoms, which could in most instances have been easily avoided. The motives of engineers, in those locations, was to lessen the amount of damages in the acquisition of land. In many instances the increased expense in stopping leaks, repairing breaches, and making protection-walls and rip-raps along the river shore, to prevent the slides common on alluvial banks, has amounted to double the sum saved in condemnation of the land.

In the more recent locations, and wherever practicable, these faults have been carefully guarded against. Instead of the embankments showing slopes at an angle of one and a half to one, they are made at an angle of two to one, thus giving greater breadth and strength at the foundation, more security to the walls, and being less liable to abrasion. A puddle-ditch is also carried through the centre of the embankment longitudinally, and is sunk some depth below the natural surface. On this the embankment is deposited, in layers of six inches at a time, over which for the whole extent of the section the carts are driven. In consequence of this plan, an embankment, when raised to its proper height, will be as firm as on the old plan it would be, after having settled for years. The construction of embankments on the old line, as contrasted with the new, will we believe fully verify the adage, "that the cheapest work is not always in the end the best or most economical."

To avoid the inconvenience which has been experienced by the erection of dams Nos. 4 and 5, and the consequent backing the water for miles, thereby rendering the construction of any works above them, and within the influence of the pools, both costly and difficult, the Board has placed under contract the section above the dam No. 6, at Cacapon, also the aqueduct over Sideling Hill creek, and such culverts as open into the pool. The masonry of these works will be raised above high-water mark before the dam is erected.

Between Sideling Hill creek and the tunnel there will be much heavy and costly work at points where the river breaks through the mountains, and again we are agreeably relieved by alluvial bottoms of easy excavation, some of considerable length; of this description is the Seven Mile Bottom, being the most extensive on that line.

The policy of the Board, in placing the tunnel and the deep cut at Old Town under contract one year since, is now apparent to every one acquainted with the localities and difficulties, and the time required to surmount them. It is now confidently believed that the progress made on these difficult sections will ensure their completion in time for their connexion with the more extended works between Cacapon and Cumberland. The Board has very recently visited the entire line from tide water to Cumberland, and take pleasure in stating that the works have progressed with as much expedition as under existing circumstances could reasonably have been expected. The deep cut at Old Town is in a state of great forwardness, fully meeting the expectations of the Board, and justifying the belief above expressed of its early completion. The preparatory works at the tunnel, being deep cuts at the upper and lower points, have also been prosecuted with great spirit by the enterprising contractor who has undertaken the work. At the upper end, the deep cut is finished to the entrance of the tunnel, on which operations will immediately commence, and be conducted without cessation both by day and night, the working parties being relieved every eight hours. The contractor, through an agent sent for the purpose to England, has succeeded in procuring a number of practical miners, and is in daily expectation of their arrival.

He has also commenced making bricks for the arch of the tunnel, of excellent materials, found in the immediate vincinty, and employs an approved patent machine for the purpose of tempering and moulding them. Should the Board at any time have reason to doubt the ability of the contractor to accomplish the undertaking, in order that the whole line may be simultaneously opened from Cumberland to Cacapon, it will be entirely practicable to hasten the operation by a division of the labor, not confined to the two extremes only, but also to operate near the centre, by the means of two shafts at favorable points of depression in the mountain, the one ninety, the other one hundred and fifty feet in depth, thus employing six parties instead of two. The length of the tunnel will be one thousand yards, its breadth twenty-four feet, and its height from bottom of canal to the crown of the arch twenty-four feet. The greatest elevation of the mountain over the tunnel is nearly four hundred feet. The entire distance occupied by the deep cuts and tunnel across the neck of land is one mile, and the saving of distance by this improvement, instead of following the course of the river, is five miles, avoiding precipitous cliffs of rock, jutting into deep water, where the canal must necessarily have been made at great cost and hazard.

The material through which the excavation is to be made consists of blue slate, in elliptical strata, with very slight, if any, admixture of earth or other substance. The same formation is presented at both ends of the tunnel line, clearly indicating that no other description of rock will be encountered. This we deem a most favorable omen, as, from actual experiment, it is ascertained that a single hand can bore from seven to eight feet per day, and the blasts loosen and throw off large masses, which are easily broken by the sledge, and, indeed, large quantities are removed by the common pick. The material excavated will be readily removed by means of a temporary railroad. It is believed that no danger from caving in will attend the operations on this work, as the stone lies in strata representing the segment of a circle, and forming in some degree a natural arch.

It is proposed, near the lower end of the tunnel, to erect a dam, as a feeder from that point to Cacapon, which will produce a slack-water navigation extending above the upper line of the tunnel. We calculate on many advantages from the erection of the dam at that place. It will supersede the necessity of any other feeder between that point and Cumberland, and the canal above is located at an elevation which will conveniently accommodate the South Branch trade, by means of a canal on that stream of only a mile in extent, and an aqueduct over the Potomac connecting with the main stem. We cannot for a moment entertain a doubt but that the Legislature of Virginia will furnish the means to secure this connexion, so important to that fertile valley. Should any unforeseen difficulties defeat our expectations of the timely completion of the tunnel, the navigation to Cumberland will be uninterrupted, as, by temporary locks at the upper end of the pool, boats may pass to and from the canal. In addition to the above considerations in favor of the proposed location of the dam, another may be urged entitled to much weight. On the completion of the canal to Cumberland, a constant and active descending trade, from the coal region of Alleghany and the agricultural districts of the West, may be confidently relied on; and it may become the policy of the Company to use the tunnel exclusively for the descending boats, free from any obstruction or delay. The pool, with the addition of a towing-path, may then be safely navigated by ascending boats, which are rarely so heavily laden as those descending; and thus, at a moderate cost, every facility will be afforded which the increased trade on the canal may require.

At a few hundred yards above the tunnel the canal will again leave the river, at Mitchell's Neck, where, by a cut of less than half a mile, and at no point exceeding in depth forty feet, a distance of one mile is saved.

The remarks made as to the difficult and light sections below the tunnel are applicable to the line between that point and Cumberland, excepting the Seven Mile Bottom, there being none of the same extent above. On this line we have to erect four aqueducts, of from fifty to seventy feet span, over Sideling Hill Creek, Fifteen Mile Creek, Town Creek, and Evitt's Creek.

A change has recently been determined upon for the site of the feeder dam at Cumberland. It was at first contemplated to place this dam one mile below the town; the site recently adopted is immediately at Cumberland, a few hundred feet below the mouth of Will's Creek. By this arrangement we are enabled to make a guard bank that will protect the basin in Cumberland, and the town itself, against injury from high water of the river, to which they would have been more or less subject with the former location of the dam. The basin will now be under the same control as the water of the canal, and will be kept at a uniform height. Warehouses and buildings may consequently be put upon it, without any precaution being taken to place them above the reach of high water. Besides, the basin can easily be drawn down, at any time, for the purpose of improvements. In a few words, the present plan conducts the independent canal directly into the town, whereas the former plan terminated it a mile below.

A communication from the President of the Company was made to the Governor of Maryland in February last, and by him laid before the Legislature, and, having been published only for the use of the members, has probably not been seen by the stockholders. The necessity of making advances on the contract prices, to avert the ruin of the contractors, and the total suspension of the work, is fully set forth, together with other views, in the following extract from that communication, which, for the information of the stockholders, we here insert.

"The works between dam No. 5, eight miles above Williamsport, and Cacapon river, nine miles above Hancock, embracing a distance of twenty-seven and a half miles, are all under contract, (with the exception of some sections already completed,) and progressing as rapidly as is practicable under the peculiar circumstances of the times, and which, owing to the great rise that has happened in the price of labor and provisions, and the great number of extensive public works that have been put under construction throughout the country, have made it very difficult for contractors any where to command the desired number of laborers at a price that could be justifiably given. The contractors on this work are men of high character, much experience, and great energy—of reputation equal to any in the country; and, as they have offered the highest prices given for labor on public works, and taken appropriate means to attract it, we have reason to believe they have accomplished all that could possibly be done by themselves or others. The difficulties which have beset their operations were not foreseen, and could not be provided against. When they entered into their contracts, the prices of provisions and labor were, collectively, about fifty per cent. less than they are now. To prevent the abandonment of the work in progress, the dispersion of the laborers employed thereon, and the necessity, after much delay, to re-let the contracts to others at greatly augmented prices, we have deemed it wise, and found it necessary, to make some advances on their contract prices, as the only means to avert such evils, and the absolute and unavoidable ruin of our contractors.

"Impressed with the importance of completing the canal to Cumberland at the earliest day possible, we would long since have put the whole line under contract, if the means formerly at our command had been sufficient to justify that course; but we had, as heretofore fully explained to the Legislature, to limit our lettings to the sum of the resources placed at our disposal, and consequently, for the time being, to confine our operations to the extension of the canal to Cacapon, and above that river to two difficult passes—a tunnel at the Paw Paw Bend, and a deep cut at Old Town. These two works are situated on the line between the Cacapon river and Cumberland; and requiring a longer time for their completion than any other portion of the same line, we seized the earliest moment of putting them under contract to men of acknowledged experience, energy, and character. By the adoption of this course, we are satisfied that these works will be finished as soon as the other portions of the line from Cacapon to Cumberland.

"But the State of Maryland having, by the aid more recently extended to this Company, placed means at its command that will justify the President and Directors in making contracts to perfect the navigation to Cumberland as soon as may be possible, every effort shall be made to fulfil the public expectation, and gratify our own and the general desire, to even the least interest, dependent on the early and happy completion of this great work.

"The unprecedented failure of the agricultural products of the two years, 1835 and 1836, especially so the last, has had a corresponding influence on the revenue of the canal derived from tolls. Until the final completion of the canal to Cumberland, when the vast and inexhaustible resources of that mineral region are brought into action, its chief reliance for revenue is to be derived from the products of the rich agricultural country bordering on the Potomac and its tributaries. The almost total failure of the grain crops will therefore rationally account for the revenue being short of our expectations."

We are happy to state that the aid afforded the contractors enabled them to continue their operations on the whole line, though, from the great demand for labor, but little increase occurred in the number of their hands until the recent pecuniary embarrassments of the country had thrown many laborers out of employment on other public works, who are now seeking it on the Chesapeake and Ohio canal. From the energy displayed on the whole line, we have reason to look with the utmost confidence to the opening of the canal from Cacapon to dam No. 5 in time for the trade of the next spring.

The opening of the new line of canal from Cacapon will be a highly interesting event in the history of this work. At Hancock, and for some distance below, the canal runs parallel to, and within a few hundred feet of, the western turnpike to Wheeling and Pittsburg. At this point the wagon transportation will cease, and that by the canal be substituted; for the plain reason that, by the latter, there will be a saving of one half, if not two thirds, between Hancock and the District cities and Baltimore. Looking to the extent of this trade, we may confidently calculate on a large accession to the revenue of the Company from tolls, when the navigation is opened to Cacapon, nine miles above Hancock. But the great sources of wealth and revenue have yet to be developed on the completion of the canal to Cumberland; which, under present prospects, will be effected within three years, and as much sooner as may be practicable; during this space the individual stockholders and Governments concerned must bear with us, under the assurance that all which human agency can effect, by zeal, enterprise, and faithful application of means, will be exerted, and that, on the consummation of this work to Cumberland, the most sanguine calculations of its friends will be more than realized.

A recent report made by George W. Hughes, Esq., United States' civil engineer, to the President of the Maryland Mining Company, after a careful examination of the coal region in the vicinity of Cumberland, contains facts and deductions, in relation to the probable coal trade on the canal, which we are satisfied will be received with interest by the stockholders and the community. Recommending to the stockholders the perusal of the entire report, we shall be content with presenting a few extracts. He says:

" Until the State of Maryland, impelled by a just pride, liberal policy, and generous emulation of her powerful and enterprising neighbors, lent her efficient aid to the Chesapeake and Ohio Canal, and thus secured its completion to Cumberland, the mineral wealth of the neighboring region was comparatively unknown, and scarcely attracted the attention even of men of science; but now, since its extent, quality, and accessibility, have been ascertained, and its superiority demonstrated, its market can be limited only by the capacity of the canal to accommodate the trade; and the projectors and eloquent advocates of that bold project for uniting the Western waters with the Atlantic, *through* the mountains of the Alleghany, may proudly anticipate a rich and well-earned harvest of fame to themselves, and of substantial benefit to their country.

"It seems as if nature, in a freak of prodigality, had bestowed, with a lavish hand, her choicest blessings on the county of Alleghany. She has given her a magnificent river for a boundary; a climate mild, equable, and healthy; a soil rich in fruits and agricultural productions; luxuriant ranges for vast herds of cattle; water, wholesome and abundant, and mineral treasures almost immeasurable in extent and incalculable in value. The county town is Cumberland, which has grown up on the site of old Fort Cumberland, at the confluence of Will's Creek and the Potomac river. At this point the canal will terminate for the present, and Cumberland will become the depot for the Western trade; through this place, also, must necessarily pass all the mineral productions which may be drawn from the adjacent mountains. Its local advantages, therefore, unless its prosperity should be checked by some great evil, will make her, at no distant day, an important inland town. The present is, however, the crisis of its fate; and on the public spirit and enterprise of its citizens her destiny mainly depends.

"The superiority of the Alleghany coal, as it regards richness, purity from all deleterious substances, and capacity for generating steam, over all other bituminous coal, foreign or domestic, has been established beyond question by the experience of practical ironmasters, and confirmed by the analyses of several of the most distinguished chemists in Washington, Baltimore, New York, and Boston. In support of this assertion I submit the following facts:

"In answer to a committee of the House of Representatives, John McP. Brien, proprietor of the Antietam iron works, says '*one* bushel of Cumberland (Alleghany) coal is worth *two* of Richmond, or any other we have used.' At Harper's Ferry, it is considered, in its natural state, equal to charcoal for the manufacture of the finest cutlery.

Analysis of Frostburg coal.

	Carbon.	Bitumen.	Alumine and iron.	Water.
Dr. T. P. Jones, -	78	19	3	—
Dr. Jackson, - -	77.09	16.05	3	3 silex.
Mr. Hays, - -	77.80	15.60	0	4.60
Professor Ducatel,* -	70	20.50	6	3.50 w.
Mr. Chilton,† - -	86, hydrogen 2, alumine 8.88, silex 0.10, oxyde of iron 0.2, water 2.0			

"Dr. Jackson, of Boston, states that the capacity of the Alleghany coal to generate steam is thirty-two per cent. greater than that of Liverpool coal. In comparison with the above, I extract the following analyses of several kinds of British bituminous coals, from Thompson's Chemistry, vol. 2, p. 301:

	Carbon.	Bitumen.	Earth.
Cannel coal, - -	75.2	21.7	3.1
Slate coal, - - -	47.6	32.5	19.9
Whitehaven, - -	57.0	41.3	1.7
Wigan, - - -	61.7	36.7	1.6
Swansea, - - -	73.5	23.1	3.4
Leitrim, - - -	71.4	23.4	5.2
Newcastle, - - -	58.0	40.0	2.0

"The Alleghany coal yields nearly as much combustible matter as anthracite, is almost as heavy, and contains only sufficient bitumen to ignite easily and burn freely, with a bright flame, destitute of any unpleasant or deleterious odor. By a proper mixture of the small with the large coal, the temperature of a room may be nicely adjusted, and the fire will be free from that intensity of heat generated by the combustion of anthracite, which is not only exceedingly unpleasant, but generally injurious. It is confidently believed that, when this coal finds it way to market, and can be supplied at a reasonable price, it will supersede all other articles for fuel for gas works and other manufacturing purposes. The present high price of wood and Liverpool coal in New York is a strong argument in favor of opening a certain avenue by which this coal can be brought to market. The supply of pine wood for steamboats is rapidly diminishing on the Atlantic board, and it is probable that choice, if not necessity, will soon cause coal to be substituted in its stead. It is generally estimated that one ton of the best bituminous coal is equal to four cords of pine wood in generating steam. By the use of coal instead of wood, less room is required, the fire is more easily regulated, and it is suggested that explosions will be less frequent than at present.

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* From a specimen from Meshech Frost's mine.

† From the Eckhart mine. The hydrogen and part of the carbon form twelve parts of bitumen.

"The time cannot be very remote when coal will be universally used, from the mountains to the Atlantic. The population of Great Britain and Ireland consume (besides other kinds of fuel) 17,000,000 tons per annum; and there can be no doubt that the coal trade from Alleghany will be limited only by the capacity of the canal. On this subject, it is stated in the memorial of the Internal Improvement Convention, assembled at Baltimore, that, 'on the Monkland Canal, quite 1,700,000 tons, or 47,000,000 of bushels, are annually conveyed to the town of Glasgow, in Scotland, the population of which is only 147,000 inhabitants, or but a little more than Baltimore and the cities of the District of Columbia.' 'The dimensions of this work (Chesapeake and Ohio Canal) are much larger than the Monkland Canal, and four times that amount might be conveyed on it, if there should be a demand for so much;' which, at only fifty cents per ton, would yield about $2,500,000 tolls from Cumberland to Georgetown. Professor Ducatel, in his report on the geology of Maryland, observes: 'From this view of the extent and condition of the coal deposite in this district, it will be seen that, should the projected scheme of communication between the Chesapeake Bay and the Western waters, by means of canals and railroads, be effected no further even than Cumberland, (and there is but little doubt that the communication will soon extend thus far,) there will be furnished a convenient outlet for an amount of coal which can be estimated only by *hundreds of millions of bushels*.'"

We understand that another important source of revenue is likely to be added to those already in view. Anthracite coal of excellent quality has been discovered on Sleepy Creek, in Virginia, at a few miles distance from its confluence with the Potomac, and one hundred and twenty miles above Georgetown. It is said that the vein is about seven feet in thickness. The proprietors have employed miners, who are opening the bed with a view of ascertaining its extent.

The arrangements of the Board on the whole line, in all its departments and police, are such as to induce a proper responsibility on the part of all its officers and agents, and to ensure a faithful discharge of their duties. The supervision on every section is such as to secure the execution of the work in conformity with the specifications and requirements of the engineers.

In consequence of impositions which have been practised on the collectors, the Board has been compelled to adopt and enforce rigid regulations in relation to the trade and navigation of the canal.

At the last session of Congress an act was obtained, confirmatory of previous acts of the Legislatures of Virginia and Maryland, by which the water power of the canal within the District, instead of being restricted as heretofore merely to the wastes, may now be disposed of at any point, and for all manufacturing purposes. The act of Maryland grants full authority, except for the manufacturing of grain within that State: the right, however, within the District of Columbia, is complete. An arrangement has been made with the party claiming the water power derived from the Little Falls, and the whole subject in controversy has been submitted to the arbitrament of Chancellor Kent, of New York, and we understand will speedily be laid before him for decision. In the meantime all impediments to the course being removed, the Board has proceeded by advertisement to offer for sale water power and sites for manufacturing purposes within the District, and also to lease or sell sites for warehouses on the mole in Georgetown. The present embarrassments of the country may for a time retard the commencement of manufactures in this District, but with returning prosperity, so decided are the advantages and inducements offered, that we may reasonably look forward to an influx of capital, population, and enterprise.

The extent of the water power, its favorable location at tide water and at the terminus of the canal, presenting advantages equal to any in the Union, justifies the belief that it will become a fruitful source of revenue, independent of the consequent increased trade on the canal. The President of the James River and Kanawha Company speaks thus of the water power afforded by the canal at Richmond: "If all could be sold, and were disposed of at existing prices, (it) would probably yield to the Company an annual sum of $120,000—or the interest of $2,000,000." With similar advantages, may we not look forward to corresponding benefits? The above remarks are especially applicable to the power within the District of Columbia, from the line of which to Cumberland the Company possesses water power of immense extent and value.

The present means of the Company will be found in the statement of the Clerk. The receipts and expenditures of the Company since its organization, distinguishing those of the last year, are shown by the statement of the Treasurer; both of which are appended to and made part of this report.

In view of an early letting of the line from Cacapon to Cumberland, as many of the engineer corps as could be spared from the works under construction have been actively engaged in revising the line and setting the stakes, many of which had been displaced by accident or design. We are assured by the Chief Engineer, that all necessary preparations will be made, so that the letting may be had by the first of August ensuing. It is the purpose of the Board to place under contract at that time the whole line from Cumberland to the Narrows, a distance of about ten miles. At this point temporary locks may be placed, by which the navigation from Cumberland may be accommodated probably one year sooner than by the continuous canal; and below that point, if not the entire line, at least all the difficult sections, including the masonry, being the works requiring the longest time for construction, will at the same time be let. A small addition to the engineer corps will be necessary, in order to give efficiency to the operations on the extended line which will then be in progress.

It has been reported to the stockholders that, under authority vested in the Board, a provisional contract has been entered into with the Commissioners of Maryland, by which the Company becomes the purchaser of the stock of the State, to the amount of $3,000,000, in the event of their not making sale of it in Europe or elsewhere. It is understood that one of the Commissioners has sailed, another is in England, and that the third will sail in a short time. In order to the vigorous prosecution of the work, it is essential that the means of the Company be strengthed by the approaching fall. From the high credit of the State of Maryland, proceeding from her having entered into no engagements for which she has not provided ample means of redemption, and the peculiar character of this stock, being irredeemable for fifty years, and bearing an interest of six per cent. payable in Europe, we will not permit ourselves to doubt but that it will be made available to meet in time the wants of the Company, either by sale or hypothecation.

The time necessary for the completion of so stupendous an undertaking as that of the Chesapeake and Ohio Canal, and the intrinsic difficulties in its construction, can only be understood and fully appreciated by personal and careful examination of the whole line, and a casual observer, in gliding on the canal by the rugged points of rocks and mountains, which sceptics had pronounced impracticable, can form but an imperfect conception of the time and labor expended, and the difficulties surmounted. Early and honest opinions were entertained that this work could be completed to Cumberland in some three of four years, and at about one half its actual cost. The public caught the impression, and, as their too sanguine expectations have not been realized, occasional symptoms of discontent have been manifested. Allowing for the delay of between two and three years, growing out of the controversy with the Railroad Company for the right of way, and the pecuniary difficulties with which for a considerable time this Company was beset, we have no hesitation in declaring our belief that no undertaking of like magnitude, and under equal embarrassments, has ever been accomplished in less time than will be the Chesapeake and Ohio Canal to Cumberland.

Signed in behalf of the President and Directors.

G. C. WASHINGTON,
President of the Chesapeake and Ohio Canal Co.

WASHINGTON, *June* 12, 1837.

APPENDIX.

Statement of money and credits in the hands of the Chesapeake and Ohio Canal Company on the 1st day of June, 1837.

Cash in bank, per Treasurer's statement,	$348,265 48	
Deduct Requisition No. 7468, not yet paid,	4 50	
		$348,260 98
Stocks of the Corporation of Washington,	$198,861 53	
of the Corporation of Georgetown,	43,750 00	
		242,611 53
Due by stockholders,	$167,646 62	
Off for doubtful debts,	100,000 00	
		67,646 62
		$658,519 13

The total amount of money paid on account of that portion of the canal above dam No. 5, is $805,528.

Amount of tolls collected on the canal for the year preceding the 1st of June, 1837, is $24,177 54.

JOHN P. INGLE,
Clerk of the Ches. and Ohio Canal Company.

OFFICE OF THE CHES. AND OHIO CANAL COMPANY,
Washington, June 1, 1837.

GENERAL ABSTRACT of the receipts and expenditures of the the receipts and disbursements in the

Year.		Receipts in the year ending 31st May, 1837.	Aggregate receipts.
1837.			
May 31	To capital stock,	$5,134 57	$3,816,528 38
	State of Maryland,	750,000 00	2,000,000 00
	Potomac Company:		
	General account,	-	418 52
	Unclaimed dividends,	-	366 30
	Tolls account,	-	26,017 20
	Tolls,	21,257 35	150,076 80
	Acquisition of lands,	80 00	1,109 91
	Engineer department,	-	2,500 24
	Construction of the canal,	-	6,657 20
	Law expenses,	58 40	1,996 73
	Interest,	8,474 72	28,328 90
	Profit and loss,	-	4,069 71
	Baltimore and Ohio Railroad Company,	2,723 00	268,723 02
		$727,728 04	$6,306,792 91

Chesapeake and Ohio Canal Company to the 1st *of June*, 1837, *and of year ending on the* 31st *of May*, 1837.

Year.		Disbursements in the year ending 31st May, 1837.	Aggregate expenditure.
1837. May 31	By Corporation of Washington,	-	$175,000 00
	Do. Georgetown,	-	43,750 00
	Potomac Company:		
	General account, -	-	373 65
	Unclaimed dividends, -	-	5 55
	Tolls account, -	$7,897 12	11,515 05
	Tolls account, - -	60 00	1,222 38
	Acquisition of lands, -	52,954 66	310,107 19
	Engineer department, -	36,188 90	183,670 23
	Construction of the canal,	556,220 67	4,924,757 79
	Law expenses, - -	477 50	21,384 14
	Interest, - -	97,614 40	148,419 93
	Contingent expenses, -	12,700 00	34,670 21
	Pay of officers, - -	7,885 00	66,097 52
	Pay of lock-keepers, -	3,657 96	22,178 80
	Printing, - -	639 65	8,017 51
	Postages, - -	52 77	794 91
	Stationary, - -	293 58	2,525 49
	Western section, -	-	4,037 08
		$776,642 21	$5,958,527 43
	By balances to the credit of the Chesapeake and Ohio Canal Co. in B'k U.S., Washington,	$7,458 09	
	By Bank of Washington, do. -	27,220 46	
	By Patriotic Bank, do. -	122,444 22	
	By B'k of the Metropolis, do. -	14,134 67	
	By Farmers and Mechanics' Bank, Georgetown, -	109,561 60	
	By Union Bank, do. -	24,529 99	
	By Bank of Potomac, Alex'a,	35,674 57	
	By Cumberland Bank of Allegany, - - -	1,218 13	
	By Washington County Bank, Williamsport, - -	6,016 98	
	Bank of the Valley, Charlestown, - - -	12 09	
		$348,270 80	
	Deduct overdrawn in Leesburg, - - -	5 32	
			348,265 48
			$6,306,792 91

TREASURER'S OFFICE CHES. AND OHIO CANAL COMP'Y,
Washington, June 1, 1837.
E. E. ROBERT BARNARD, *Treas.*